Air Education and Training Command

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U.S. AIR FORCE

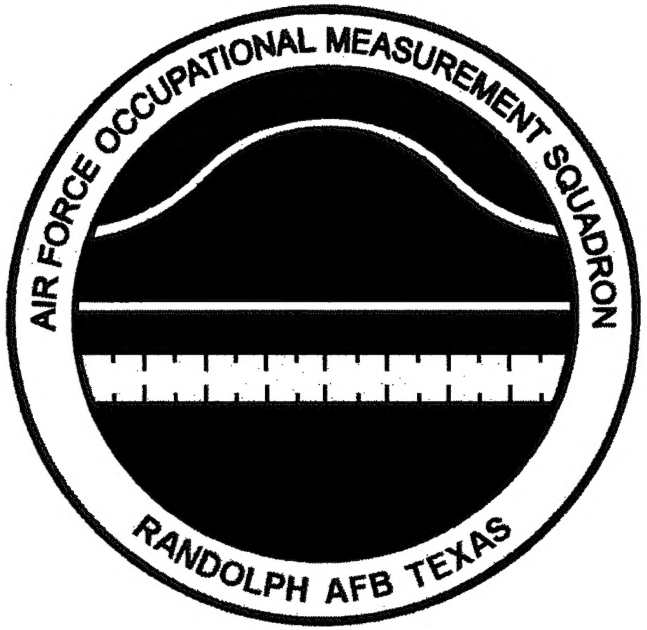
Occupational Survey Report AFSC 1A1X1B Flight Engineer, Helicopter

20031126 074

Dr. Burke Burright
23 August 2002

Integrity - Service - Excellence

Air Force Occupational Measurement SQ



AFOMS/OA
1550 Fifth Street East
Randolph AFB, TX 78150
DSN 487 – 6811
https://www-r.omsq.af.mil/OMY/indexomy.htm

Integrity - Service - Excellence

Overview

- Survey background
- Survey results
- Implications and way ahead

Work Performed

- Operate and monitor engine and helicopter systems, controls, and indicators
- Compute and apply helicopter weight, balance, and performance data
- Perform inspections and non-scheduled maintenance
- Plan, organize, and direct flight engineer activities, such as logs, reports, and records

Survey Background

- Survey initiated to obtain data to:
  - Evaluate current classification and training documents
  - Support promotion test development
- Last Occupational Survey Report (OSR) - May 1999
- Current survey data collected- November 2001 to March 2002
- Components Surveyed:
  - Active Duty: 3-, 5-, and 7-Skill Levels
  - Guard: 5- and 7-Skill Levels
  - Reserve: 5- and 7-Skill Levels

Current Training Program

- Enlisted Air Undergraduate Course (EAUC) Helicopter Flight Engineer Helper (J3AQR1A111B 001)
  - Lackland AFB, TX
  - 14 academic days
  - CCAF credits: 5 hours
- Safety and survival training
- Basic Helicopter Flight Engineer
  - Kirtland AFB, NM
  - 25 academic days
  - CCAF credits: 8 hours
  - AFSC awarding
- Flying Qualification Courses

Current Training Program
(Continued)

Flying Qualification Courses

- Three tracks
  - UH-1N Initial Qualification
  - MH-53J Flight Engineer Mission Qualification
  - HH-60G Flight Engineer Mission Qualification
- 58th TRS, Kirtland AFB, NM
- AETC Functional Manager requested that OMS focus its training analysis on flying qualification courses

Current Training Program
(Continued)

- **UH-1N Initial Qualification Course (UH1NMQ)**
  - Qualifies flight engineers to be mission crewmembers in UH-1N helicopter
  - 80 academic days
  - CCAF credits: 10 hours

  Programmed Flying Training (PFT)

  FY02: 14 seats

  FY03: 23 seats

  Elimination Rate: 25% in FY02

Current Training Program
(Continued)

- **MH-53J Flight Engineer Mission Qualification (MH53JFEMQ)**
  - Trains helicopter flight engineers to perform duties in the MH-53J helicopter
  - 160 academic days
  - CCAF credits: 35 hours

  Programmed Flying Training (PFT)

  FY02: 24 seats

  FY03: 24 seats

  Elimination Rate: 60% in FY02

Current Training Program
(Continued)

- **HH-60G Flight Engineer Mission Qualification (HH60FEMQ)**
  - Qualifies flight engineers to perform duties on the HH-60G helicopter
  - 88 academic days
  - CCAF credits: 23 hours

Programmed Flying Training (PFT)

FY02: 30 seats

FY03: 31 seats

Elimination Rate: 17% in FY02

Survey Sample Characteristics

	AD	AFRC	ANG	Total
Assigned*	271	37	21	329
Mailed Out	238	33	18	289
Sample	90	11	1	102
Usable Returns	38%	33%	6%	35%

Average time in career field for AD: 7 yrs 3 months
Average TAFMS for AD: 13 yrs 10 months
Percent of AD in first enlistment: 0%

* Assigned as of November 01

Skill & Paygrade Characteristics

Skill-Level Distribution

	Assigned*	Sample
3-Level -	2%	3%
5-Level -	48%	50%
7-Level -	50%	47%

Paygrade Distribution

	Assigned*	Sample
E-1 - E-3 -	**	0%
E-4 -	5%	3%
E-5 -	43%	49%
E-6 -	31%	30%
E-7 -	20%	18%
E-8 -	**	0%

*Assigned as of Nov 01
** Less than 1 percent

Command Representation**

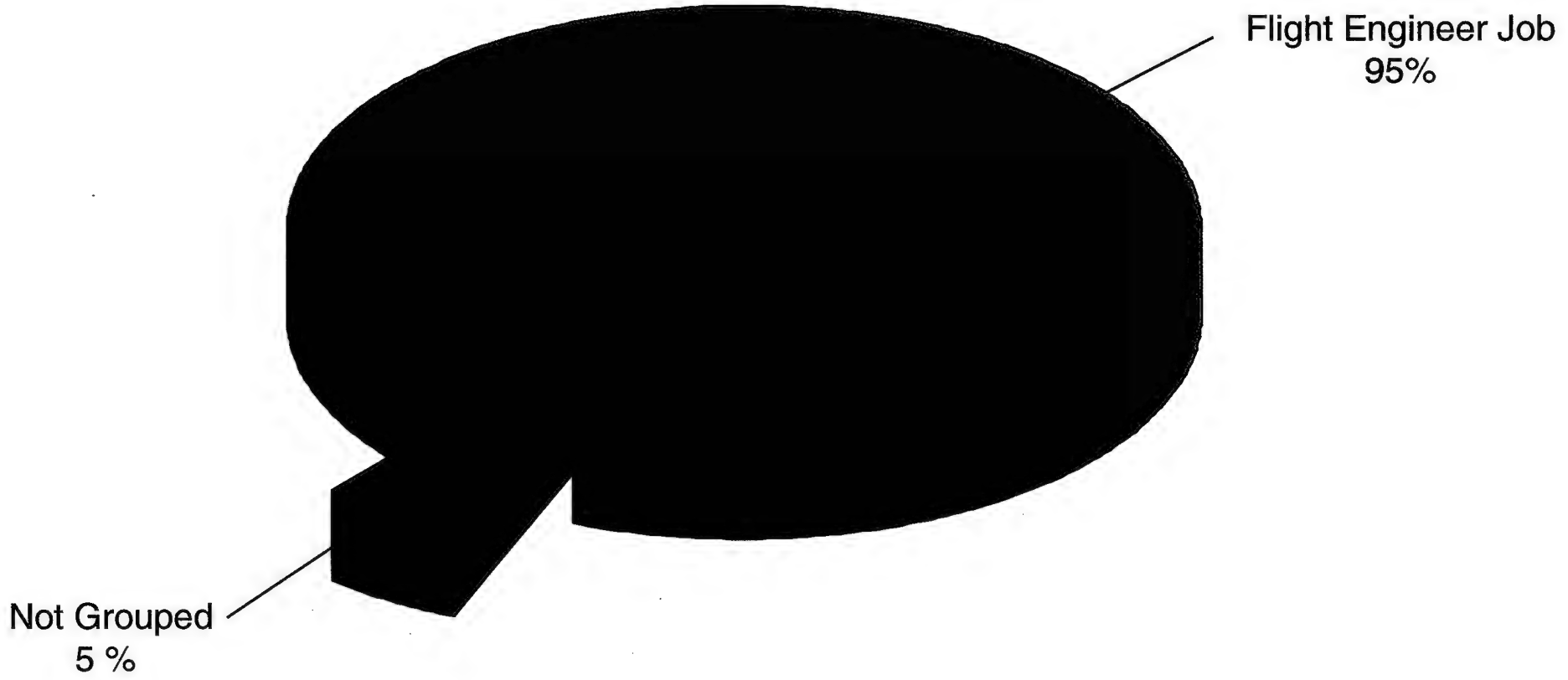
Command	Assigned %*	Sample %
AFSOC	29	25
AETC	20	27
ACC	18	12
AMC	6	13
AFSPC	4	6
PACAF	4	6
AFMC	2	0
AFRC	11	11
ANG	6	1

* Assigned as of March 01

** Might not add to 100% due to rounding

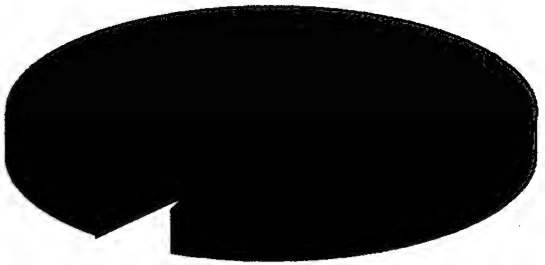
Job Structure

Sample size:102



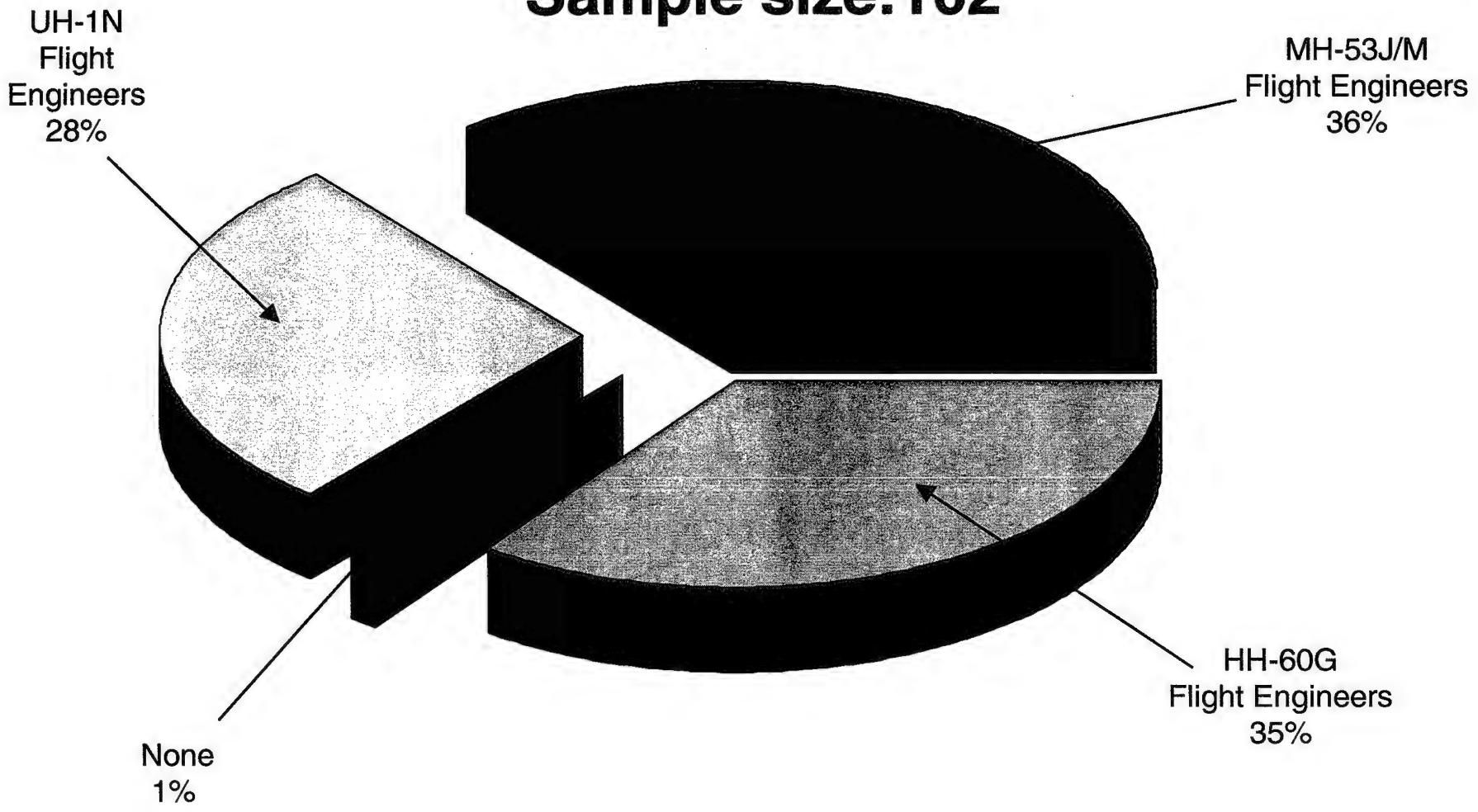
FLIGHT ENGINEER JOB (N=97)

- Compute takeoff and landing data (TOLD)
- Review AFTO Forms 781-series
- Perform aircrew scanning duties
- Determine engine power requirements using performance data
- Participate in pre-mission briefing
- Secure equipment for flight
- Perform operational checks of aircraft systems or equipment



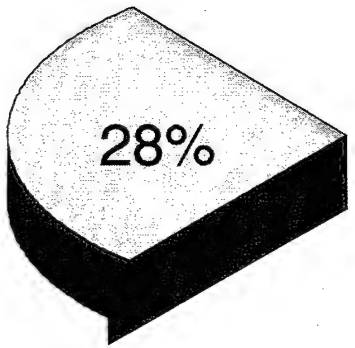
Sample by Aircraft

Sample size:102



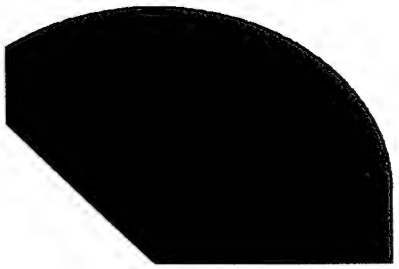
UH-1N Flight Engineers
(N=28)

- Average number of tasks performed: 165
- Task performed primarily by UH-1N flight engineers:
  - Operate or monitor MEDEVAC equipment



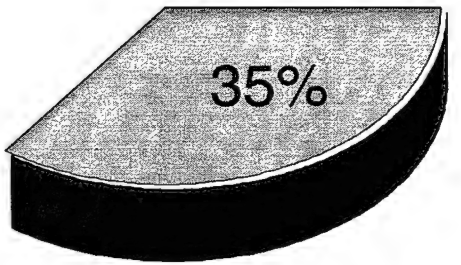
MH-53J/M Flight Engineers
(N = 37)

- Average number of tasks performed: 285
- Task performed primarily by MH-53J/M flight engineers:
  - Operate hover coupler system
  - Adjust engine controls during flight
  - Operate or monitor fuel jettison systems
  - Monitor landing gear (LDG) position indicators
  - Operate automatic flight control systems
  - Operate radar systems
  - Monitor IDAS/MATT
  - Operate FLIR systems



HH-60G Flight Engineers
(N=36)

- Average number of tasks performed: 265
- Tasks performed primarily by HH-60G flight engineers:
  - Operate or monitor blade deice systems
  - Annotate engine conditioning monitoring logs
  - Perform static-line or high-altitude low-opening (HALO) paradrop procedures
  - Monitor aircraft weapon system operations
  - Deploy pyrotechnics



Career Ladder Progression

- The distribution of time among duty areas change little between 3-, 5-, & 7-skill levels
- Only a slight increase in percentage of time devoted to management, supervision, and training activities
  - 7-levels devote only 6% of their time to management and supervision
  - 7-levels devote only 5% of their time to training

Career Ladder Progression
Percent Time Spent on Duties

	DAFSC* 1A131B (N = 3)	DAFSC* 1A151B (N = 51)	DAFSC* 1A171B (N = 48)
Performing General Aircrew Activities	18	18	17
Performing General Maintenance Activities	3	3	3
Performing Mission Planning or Performance Data Computation Activities	4	6	5
Performing Auxiliary System Activities	7	6	6
Performing Communication & Navigation System Activities	6	6	8
Performing Electrical System Activities	2	2	2
Performing Flight Control System Activities	3	3	3
Performing Fuel System Activities	7	5	5
Performing Landing Gear (LDG) & Brake System Activities	2	1	2
Performing Pneudraulic & Hydraulic System Activities	2	2	2
Performing Engine System Activities	4	5	4
Performing Rotor, Transmission & Drive System Activities	8	7	6
Performing Special Mission Activities	18	15	15
Performing Emergency Procedure Activities	8	7	6
Performing General Administrative & TO System Activities	3	4	4
Performing General Supply and Equipment Activities	3	1	1
Performing Training Activities	2	5	5
Performing Management, Supervisory, or Evaluation Activities	**	4	6

* Columns might add to 100% due to rounding
**Less than 1 percent

UH-1N MISSION QUALIFICATION TRAINING

- UH-1N flight engineers perform a common set of core tasks
- All of the SOI's learning objectives and maneuver items matched to tasks were well supported
- A number of unmatched tasks deserve consideration for inclusion in the SOI

Representative Tasks Performed by UH-1N Flight Engineers

Tasks	Percent Members Performing (N=28)
Review AFTO Form 781-series	93
Load or offload personnel	93
Brief aircraft commanders on aircraft weight and balance status	93
Perform fireguard duties	93
Perform aircraft scanning duties	89
Compute aircraft weight and balance data using charts, calculators,or computers	89
Determine engine power requirements using performance data	89
Secure equipment for flight	89
Compute takeoff and landing data (TOLD)	89
Participate in pre-mission briefings	89
Monitor transmission system operations	89
Open or close crew entrance doors	89
Prepare or review passenger manifests	89

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Tasks not Referenced to UH-1N SOI

Examples

Tasks		Percent Members Performing	Tng Emp	Tsk Dif	ATI
A0032	Perform functional check flight (FCF) duties	89	5. 00	**6.82**	18
A0035	Perform operational check of aircraft systems or equipment	82	**6.62**	**6.20**	18
A0040	Prepare for aircrew testing or evaluation	75	4.25	5.61	18
K0164	Operate or monitor fuel flow system	61	**6.83**	4.84	18
M0233	Configure or reconfigure aircraft for special missions	75	5.38	5.45	18
N0284	Direct crewmembers or passengers during emergency procedures	75	**6.21**	5.51	18

Mean TE Rating is 4.00, Standard Deviation is 2.01 (HIGH TE= 6.01)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)

MH-53J/M MISSION QUALIFICATION TRAINING

- MH-53J/M flight engineers perform a common set of core tasks
- All of the SOI's learning objectives and maneuver items matched to tasks were well supported
- A number of unmatched tasks deserve consideration for inclusion in the SOI

Representative Tasks Performed by MH-53J/M Flight Engineers

Tasks	Percent Members Performing (N=37)
Monitor or report in-flight trend analyses, such as ground speed, altitude,or drop rate	100
Review AFTO Form 781-series	100
Perform operational checks of aircraft systems or equipment	100
Perform aircrew preflight inspections of aircraft weapon systems	100
Perform aircrew scanning duties	100
Secure equipment for flight	100
Operate or monitor fuel jettison system	100
Fire weapons for qualification, such as 9mm or M-16s	100
Verify safety pins and streamers removal prior to flight or installation after flight	97
Perform desert landing or limited visibility brown-out operations	97
Compute takeoff and landing data (TOLD)	97
Perform engine starts, run-ups,or shutdowns	97
Update navigation systems	97

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Tasks not Referenced to MH-53J/M SOI

Examples

Tasks		Percent Members Performing	Tng Emp	Tsk Dif	ATI
A0028	Perform aircrew preflight inspections	100	**7.04**	5.78	17
A0032	Perform functional check flight (FCF) duties	95	5. 00	**6.82**	18
B0047	Apply external alternating current (AC) or direct current (DC) power to aircraft	92	**6.00**	**3.75**	18
L0212	Operate or monitor chip detection system malfunctions	95	**6.58**	5.22	18
M0257	Perform defensive suppressive fire (DSF) operations	84	5.00	**6.76**	17
M0258	Perform desert land or limited visibility brownout operations	97	5.62	**6.77**	17

Mean TE Rating is 4.00, Standard Deviation is 2.01 (HIGH TE= 6.01)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)

HH- 60G MISSION QUALIFICATION TRAINING

- HH-60G flight engineers perform a common set of core tasks
- All of the SOI's learning objectives and maneuver items matched to tasks were well supported
- A number of unmatched tasks deserve consideration for inclusion in the SOI

Representative Tasks Performed by MH-60G Flight Engineers

Tasks	Percent Members Performing (N=36)
Perform aircrew scanning duties	100
Perform aircrew preflight inspection of aircraft systems or equipment, other than weapon systems	100
Compute climb, cruise, descent, range,or maximum endurance data	100
Compute take off and landing data (TOLD)	100
Operate aircraft weapon systems	100
Operate night vision goggles	100
Perform remote site landings or takeoffs	100
Operate or monitor rescue hoist systems	100
Perform, practice, or simulate engine malfunction emergency procedures	100
Perform, practice,or simulate flight control system emergency procedures	100

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Tasks not Referenced to HH-60G SOI

Examples

Tasks		Percent Members Performing	Tng Emp	Tsk Dif	ATI
A0040	Operate detachable emergency equipment	83	4.79	2.61	17
A0043	Prepare for aircrew testing or evaluation	94	4.25	5.61	18
A0045	Secure equipment for flight	100	**6.33**	3.71	18
D0102	Operate airframe installed cargo handling equipment	64	4.42	4.68	17
D0105	Operate or monitor cargo door or ramp systems	72	5.62	4.28	17
D0106	Operate or monitor cargo sling system	64	5. 38	4.92	17

Mean TE Rating is 4.00, Standard Deviation is 2.01 (HIGH TE= 6.01)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)

Job Satisfaction Indicators (AD) (Current vs. Previous Study)

	1-48 Months		49-96 Months		97+ Months	
	2002 (N=35)	1999 (N=32)	2002 (N=23)	1999 (N=30)	2002 (N=32)	1999 (N=59)
Job interesting	89	82	100	84	97	88
Talents well utilized	94	87	100	83	94	88
Training well utilized	97	97	100	87	94	92
Sense of accomplishment	89	90	91	66	94	82
Plan to reenlist	74	82	78	60	66	50

Retention Dimensions
First-Assignment Airmen (N=35)

Planning to Reenlist (N=26)	Percent Responding	Average
Pay and allowances	62	2.25
Bonus or special pay	62	2.25
Retirement benefits	58	2.40
Military-related education & training opportunities	46	1.83
Job security	42	2.55

Planning to Separate (N=5)		
Pay and allowances	100	2.60
Civilian job opportunities	60	3.00
Base housing	40	3.00
Civilian job opportunities	40	3.00
Enlisted evaluation system	40	3.00

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

1A1X1B

Retention Dimensions
Second-Assignment Airmen (N=23)

Planning to Reenlist (N=18)	Percent Responding	Average
Retirement benefits	56	2.70
Job security	44	2.62
Medical/dental care for AD member	39	2.00
Esprit de corps/morale	39	2.62
Off-duty educational or training opportunities	32	2.60
Planning to Separate (N=3)		
Pay and allowances	33	3.00
Bonus or special pay	33	3.00
Civilian job opportunity	33	3.00
Promotion opportunities	33	3.00
Recognition of effort	33	3.00

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

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Retention Dimensions
Career Airmen (N=32)

Planning to Reenlist (N=21)	Percent Responding	Average
Job security	67	2.64
Military lifestyle	62	2.46
Pay and allowances	57	2.26
Off-duty education/training opportunities	57	2.50
Retirement benefits	52	2.77

Planning to Separate (N=1)		
Job security	100	2.00

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

1A1X1B

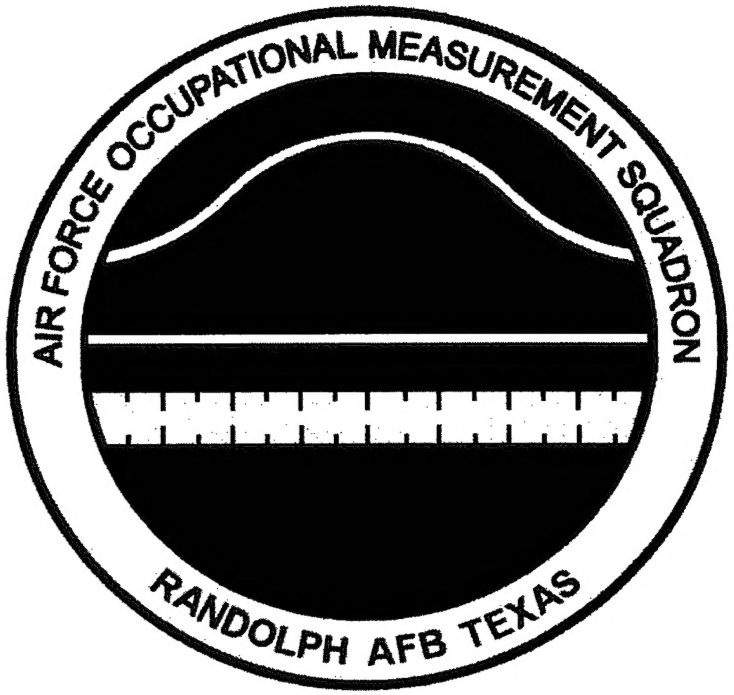
Summary of Results

- Aircraft types impact tasks performed
- Career ladder progression typical of aircrew AFSCs
  - Heavy focus on flying tasks through 7-level
  - Minimal involvement in management & training activities
- Flying training courses well supported
  - All matched learning objectives and maneuver items warrant inclusion in courses
  - Numerous tasks should be considered for inclusion
- Intrinsic job satisfaction and reenlistment rates high

Way Ahead

- OSR delivery trip planned for October
- Utilization and Training Workshop (U&TW)
  - ✓ Held March 2002
  - ✓ Next U&TW not yet scheduled
- Next SKT rewrite (major) is scheduled for Nov 02

Questions?



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E-Mail: Burke.Burright@randolph.af.mil

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